IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Please amend claims 1, 69 and 80.

Please add new claims 81 and 82.

Please cancel claims 3, 22-24, 30-66 and 73-79 without prejudice.

STATUS OF CLAIMS

1. **(currently amended)** An isolated nucleic acid molecule comprising a nucleotide sequence that encodes a polypeptide comprising an amino acid sequence, said amino acid sequence at least ~~90%~~ 98% homologous to a sequence of SEQ ID NO:2, wherein said polypeptide, when bound to a binding partner, stimulates an activity of the polypeptide.

2. **(original)** The isolated nucleic acid molecule of claim 1 comprising a sequence that encodes a polypeptide comprising a sequence of SEQ ID NO:2.

Claim 3 **(canceled)**

4. **(original)** The isolated nucleic acid molecule of claim 1 comprising a sequence of SEQ ID NO:1.

5. **(original)** The isolated nucleic acid molecule of claim 1 wherein said nucleic acid molecule is DNA.

6. **(original)** The isolated nucleic acid molecule of claim 1 wherein said nucleic acid molecule is RNA.

7. **(original)** An expression vector comprising a nucleic acid molecule of any one of claims 1 to 4.

8. **(original)** The expression vector of claim 7 wherein said nucleic acid molecule comprises a sequence of SEQ ID NO:1.

9. **(original)** The expression vector of claim 7 wherein said vector is a plasmid.

10. **(previously presented)** The expression vector of claim 7 wherein said vector is a viral vector.

11. **(original)** The expression vector of claim 10 wherein said vector is selected from the group consisting of adenoviruses, baculoviruses, parvoviruses, herpesviruses, poxviruses, adeno-associated viruses, Semliki Forest viruses, vaccinia viruses, and retroviruses.

12. **(previously presented)** The expression vector of claim 7 wherein said nucleic acid molecule is operably connected to a promoter selected from the group consisting of simian virus 40, mouse mammary tumor virus, long terminal repeat of human immunodeficiency virus, maloney virus, cytomegalovirus immediate early promoter, Epstein Barr virus, rous sarcoma virus, human actin, human myosin, human hemoglobin, human muscle creatine kinase, and human metalothionein.

13. **(original)** A host cell transformed with an expression vector of claim 7.

14. **(original)** The transformed host cell of claim 13 wherein said cell is a bacterial cell.

15. **(original)** The transformed host cell of claim 14 wherein said bacterial cell is E. coli.

16. **(original)** The transformed host cell of claim 13 wherein said cell is yeast.

17. **(original)** The transformed host cell of claim 16 wherein said yeast is S. cerevisiae.

18. **(original)** The transformed host cell of claim 13 wherein said cell is an insect cell.

19. **(original)** The transformed host cell of claim 18 wherein said insect cell is S. frugiperda.

20. **(original)** The transformed host cell of claim 13 wherein said cell is a mammalian cell.

21. **(original)** The transformed host cell of claim 20 wherein mammalian cell is selected from the group consisting of chinese hamster ovary cells, HeLa cells, African green monkey kidney cells, human HEK-293 cells, and murine 3T3 fibroblasts.

Claims 22-24 **(canceled)**

25. **(previously presented)** A composition comprising a nucleic acid molecule of any one of claims 1 to 4 or 22 and an pharmaceutically acceptable carrier or diluent.

26. **(previously presented)** A composition comprising a recombinant expression vector of claim 7 and an pharmaceutically acceptable carrier or diluent.

27. **(previously presented)** A method of producing a polypeptide that comprises a sequence of SEQ ID NO:2, said method comprising the steps of:

a) introducing a recombinant expression vector of claim 8 into a compatible host cell;

b) growing said host cell under conditions for expression of said polypeptide; and

c) recovering said polypeptide.

28. **(original)** The method of claim 27 wherein said host cell is lysed and said polypeptide is recovered from the lysate of said host cell.

29. **(original)** The method of claim 27 wherein said polypeptide is recovered by purifying the culture medium without lysing said host cell.

Claims 30-66 **(canceled)**

67. **(previously presented)** A purified and isolated polynucleotide comprising a nucleotide sequence encoding a nGPCR-1079 allelic variant identified according to a method of identifying a nGPCR-1079 allelic variant that correlates with a mental disorder, comprising the steps of:

(a) providing a biological sample comprising nucleic acid from a human patient diagnosed with a mental disorder, or from the patient's genetic progenitors or progeny;

(b) detecting in the nucleic acid the presence of one or more mutations in an nGPCR-1079 that is expressed in the brain, wherein the nGPCR-1079 comprises an amino acid sequence of SEQ ID NO:2, and allelic variants thereof, and wherein the nucleic acid includes sequence corresponding to the gene or genes encoding nGPCR-1079;

wherein the one or more mutations detected indicates an allelic variant that correlates with a mental disorder.

68. **(original)** A host cell transformed or transfected with a polynucleotide according to claim 67 or with a vector comprising the polynucleotide.

69. **(currently amended)** A purified polynucleotide comprising a nucleotide sequence encoding nGPCR-1079 of a human with a mental disorder;

wherein said polynucleotide hybridizes to the complement of a sequence of SEQ ID NO:1 under the following hybridization conditions:

(a) hybridization for 16 hours at 42°C in a hybridization solution comprising 50% formamide, 1% SDS, 1 M NaC1, 10% dextran sulfate and

(b) washing 2 times for 30 minutes at 60EC in a wash solution comprising 0.1x SSC and 1% SDS; and

wherein the polynucleotide that encodes nGPCR-1079 amino acid sequence of the human differs from the sequence of SEQ ID NO:1 by at least one ~~residue~~ nucleotide.

70. **(original)** A vector comprising a polynucleotide according to claim 69.

71. **(original)** A host cell that has been transformed or transfected with a polynucleotide according to claim 69 and that expresses the nGPCR-1079 protein encoded by the polynucleotide.

72. **(original)** A host cell according to claim 71 that has been co-transfected with a polynucleotide encoding the nGPCR-1079 amino acid sequence set forth in a sequence of SEQ ID NO:1 and that expresses the nGPCR-1079 protein having the amino acid sequence set forth in SEQ ID NO:2.

Claims 73-79 **(canceled)**

80. **(currently amended)** An isolated nucleic acid molecule comprising a nucleotide sequence that encodes a polypeptide comprising an amino acid sequence

having at least 99% homology to SEQ ID NO:2, wherein said polypeptide, when bound to a binding partner, stimulates an activity of the polypeptide.

81 (**new**) The isolated polypeptide of claim 1 or 80 wherein said activity is production of a second messenger molecule.

82 (**new**) The isolated polypeptide of claim 1 or 80 wherein said second messenger molecule is cAMP.